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NOTES AND NEWS.

THE BELIEF that the nucleolus is not a permanent cell organ has been further confirmed by the observations of F. Rosen (*Bot. Centralbl.* 65: 115) in his studies of the root tips of *Pisum*, *Phaseolus* and *Zea*.

THE METHOD by which underground shoots gradually sink in the soil is said by A. Rimbach (*Ber. Deutsch. Bot. Gesell.* 13: 141) to be due to the power of forming contractile roots, especially when they are young.

IN HIS STUDY of the "oil tubes" of *Umbelliferæ* C. Van Wisselingh (*Arch. Néerl. Sci. Ex. et Nat.* 29: 199) concludes that the characteristic substance of the walls is neither suberin nor cutin, but an allied substance which he names "vittin."

DARWIN'S explanation of the nyctitropic position of leaves, that it is a protection against nocturnal radiation, has been controverted by E. Stahl (*Ber. Deutsch. Bot. Gesell.* 13: 182), who sees in the position a device to promote transpiration in the night and early morning.

A PATHOGENIC YEAST has recently been studied by Dr. H. Tokishige of Tokio (*Centralbl. f. Bak.*, 1te Abt., 19: 105). It is the cause of an infectious skin disease of horses in Japan. In artificial cultures it produces spores, and is named by the author, *Saccharomyces farciminosus*.

MR. JOHN K. SMALL has described (*Bull. Torr. Bot. Club*, Jan.) two new genera of *Saxifragaceæ*. *Jepsonia* is based upon *Saxifraga Parryi* Torr. and includes also *S. malvaefolia* Greene; and *Saxifragopsis* is based upon *Saxifraga fragarioides* Greene. Both genera are illustrated.

IT IS ANNOUNCED that the herbarium of the late Mr. Redfield, bequeathed by him to the Philadelphia Academy of Science, is about to be sold by that institution to form a nucleus for the Redfield fund of \$20,000, to be used for the benefit of the botanical section of the Academy.

IT IS OF INTEREST to note that the protest against the old category of "parallel-veined" leaves is growing. L. Gabelli (*Malpighia* 9: 356) has pointed out that the greater number of cases so referred are but instances of palmate venation modified by the ribbon-like form of the leaf.

THE ANTER of *Loranthaceæ* has been investigated by Van Tieghem (*Bull. Soc. Bot. France* 42: 363) with some interesting results. The number of "pollen-sacs" is remarkably variable, ranging from one to an indefinite number. It would be of interest to know whether "pollen-sacs" refer to the microsporangia, or to the "pollen-sacs" of ordinary usage.

THE "LATENT LIFE" of the seed has been a matter of much curious speculation. C. De Candolle has come to the conclusion (*Arch. Sci.*

Phys. et Nat. 33: 497) that it is a case of "suspended animation." It is hard to imagine such a thing as "potential life," but easy to conceive of the necessary life exchanges being reduced to so low an ebb and flow as to be imperceptible.

THE EDITORSHIP of Queen's *Microscopical Bulletin* will hereafter be in the hands of Mr. Albert S. Baker. Mr. Edward Pennock, who has been the able editor of the *Bulletin* since its inception twelve years ago, has severed his connection with the firm, in order to establish a new depot for microscopical supplies. The journal will be continued without material change in form.

BULLETIN DE L'HERBIER BOISSIER for Dec., 1895, and Jan., 1896, contain papers of unusual interest to American botanists. In the former, the Mexican collection, known as *Planteæ Selvianæ* and determined by numerous specialists, is presented in part. In the latter, Renaud and Cardot discuss certain species distributed in their *Musci Americae Septentrionalis Exsiccati*.

THE EXPLORATION of Central Africa is bringing to light many plants of great interest. Splendid forests of what are called "cedars" have been discovered on the Mlanje plateau, in British Central Africa. This "cedar" is a *Widdringtonia*, somewhat distantly allied to the cypresses. It seems now as though it is an isolated plant, somewhat like the Sequoias of our own Pacific slope.

NEW TERMS are constantly arising in botanical literature. One of the latest is "heterotopic," applied by F. X. Gillot (*Bull. Soc. Bot. France* 41: 16) to those plants which are occasionally found on soils apparently very different from their normal substratum. The difference, M. Gillot shows, is more seeming than real.

THAT THERE IS NEED of some reconstruction of our views as to the development of the "embryo-sac" structures is evidenced not only by the fact that *Casuarina* has no antipodal cells, which seems to be true also of certain amentaceous genera, but now by the fact that *Corylus*, announced to be chalazogamic by Nawaschin, shows well-developed antipodals before the appearance of the egg-apparatus.

MR. HEMSLEY, in *Gardner's Chronicle* (Jan. 11th), gives a brief account of recent botanical discoveries in New Zealand, where botanical activity is very great. Hooker's *Handbook* of thirty years ago is the only complete account of the flora, but the *Transactions of the N. Z. Inst.*, now having reached its 27th volume, has been made the record of botanical discovery. In it about 550 new species of flowering plants have been described, but among them all there is but one new genus, and that an inconspicuous one.

THE VALUABLE COLLECTIONS of Mr. J. B. Ellis of Newfield, N. J., have been purchased by the New York Botanic Garden, together with a large part of his mycological library. It is a very large herbarium, and one of the most valuable in the country, containing numbers of type specimens, and rich in material illustrating the distribution of species. The Garden is to be congratulated upon securing so important a collection of fungi. It will shortly be moved to a fire-proof building in New York city to await the completion of the Museum Building at the Botanic Garden.

PROF. ALBERT N. PRENTISS, for many years professor of botany at Cornell University, has been compelled by prolonged ill health to resign his professorship. He has been elected *Professor Emeritus* by the Board of Trustees. The vacancy thus caused has been filled by the promotion of associate professor Geo. F. Atkinson to the professorship. Assistant professor W. W. Rowlee has been promoted to the highest grade of assistant professor. E. J. Durand, Sc. D., has been appointed instructor in botany, and K. M. Wiegand assistant. The courses of instruction have been reorganized and beginning with the next college year advanced and graduate courses in botany will be offered.

THE RECENT "Culver gift" of one million dollars to the University of Chicago for biological endowment has resulted in the establishment of a Department of Botany, in which Dr. John M. Coulter has accepted the head professorship. A large building, to be known as the "Hull Botanical Laboratory," has been planned, and its erection will soon be begun. The four stories of this building will contain ample space for lecture rooms, libraries, laboratories, and private research rooms for morphology, physiology, and taxonomy. Above the fourth story a large roof greenhouse will supply an abundance of living material under all conditions. As the building will not be completed before April of 1897, the full botanical staff will not be organized before the fall of that year.

IN A RECENT number of *Anatomischer Anzeiger*, Professor Conway MacMillan criticizes the statements of Dr. Beard regarding the resemblance between metazoan and metaphytic reproductive processes. The statement that "the whole of the cells of the gametophyte must be looked upon as morphologically equivalent, some becoming differentiated as vegetative organs by sterility, others retaining the primitive character of becoming conjugating gametes," is regarded as specially objectionable. It certainly seems to follow the morphological idea of Bower with reference to the sporophyte. Professor MacMillan homologizes metazoan and metaphytic reproduction by considering "the metaphytic coenogenetic spore a homologue of the metazoan blastomere." He does not see alternation of generations in animals as in plants, the reason of which he suggests lies in the "general automobility of sexual animals and the as general non-automobility of sexual plants." He concludes that "sporophytization is as essentially a plant character as cephalization is an animal." "The one is an expression in the organism of the static life, the other of the dynamic."

MR. J. E. HUMPHREY, in *Annals of Botany* (Dec.), discusses "some constituents of the cell." The problem of the nucleolus is taken up, and Zimmermann's view that it is a permanent organ combatted. Strasburger contends that it disappears or at least diminishes during nuclear division and is frequently ejected into the cytoplasm, and has proposed the theory that it furnishes the material for the spindle-fibers. Humphrey, in examining abundant material, confirms Strasburger as to the usual disappearance of nucleoli during karyokinesis and their reappearance in the daughter nuclei. All this, of course, militates against the idea that the nucleolus is a permanent organ. Humphrey

has also examined Zimmermann's "sickle-stage" of the nucleolus, in which it occurs flattened against the nuclear membrane. Zimmermann has connected this phenomenon with the reduction of the chromosomes, and therefore finds it only in the first division of the spore mother-cell. Humphrey finds it in ordinary vegetative cells and not at all in the spore mother cells, and when found it is better explained as due to displacement by the unequal penetration of the fixing fluid, and hence of no significance.

The "centrospheres" are also discussed, and the fragmentary character of our knowledge concerning them emphasized, and also the difficulty of observing them in plants as compared with animals. All additional evidence, however, goes to show their uniformity, their permanent character, and their fundamental importance.

M. P.-A. DANGEARD, in *Le Botaniste* (Jan. 10th), has published a very interesting illustrated paper upon the parasites of the nucleus and those of the cytoplasm.

ENGLER's *Die natürlichen Pflanzenfamilien* is rapidly approaching completion. Parts 126-128 are now before us, containing besides several small families the beginning of *Labiatae* by Briquet.

THE DIVISION OF FORESTRY has issued as its tenth bulletin "an elementary discussion of the characteristics and properties of wood," by Filibert Roth, special agent in charge of timber physics. It is the first publication of its kind in English, in systematic and available form, and with special application to American timber.